

J. MICHAEL CORAK

IBLA 97-476

Decided July 29, 1999

Appeal from a decision of the Montana State Office, Bureau of Land Management, rejecting noncompetitive geothermal lease offer MIM 86688.

Affirmed.

1. Geothermal Leases: Known Geothermal Resources Area--
Geothermal Leases: Noncompetitive Leases

A noncompetitive geothermal resources lease offer must be rejected if the land is found to be within a known geothermal resource area and the offeror presents no evidence to show that the known geothermal resource area designation is in error.

APPEARANCES: J. Michael Corak, Helena, Montana, pro se; John C. Chaffin, Office of the Solicitor, U.S. Department of the Interior, Billings, Montana, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE TERRY

J. Michael Corak (Corak or Appellant) has appealed from a decision of the Montana State Office, Bureau of Land Management (BLM), dated June 3, 1997 (Decision), rejecting noncompetitive geothermal lease offer MIM 86688.

Appellant filed his offer to lease with BLM on April 11, 1997, seeking to lease 1,280 acres of land within secs. 31 and 32, T. 12 N., R. 6 W., Principal Meridian, Lewis and Clark County, Montana. Sections 31 and 32 are within the Marysville Known Geothermal Resource Area (KGRA), designated as such on January 15, 1975, with an effective date of February 1, 1974.

The BLM decision provided the following explanation for its rejection of the offer:

Title 43 CFR 3200.1, * * *, requires that the BLM determine the boundaries of known geothermal resource areas (KGRA) and that the lands within those boundaries shall be leased only through competitive bidding to the highest qualified bidder.

All of the lands in your application are within the Marysville Known Geothermal Resource Area. We have reviewed

this classification and have determined that it is still valid for thirteen sections included within the original boundaries. The lands in your lease application are included in these sections.

* * * * *

Your application is hereby rejected. In addition to the lands being within a known geothermal resource area, the following lands are not subject to leasing because the United States retained no mineral rights when the lands were patented:

Sec. 31: Area in Patents 22603 and 26179

Sec. 32: Lots 4, 8, 10, 11, NW4NW4 and the area in Patents 26179, 319735, 22562, 7881[,] 18697.

In his Notice of Appeal (NOA), Appellant makes the following arguments:

Applicant appeals this decision based upon his opinion that known data are insufficient in the Marysville area for such classification under the guidelines of Title 43 CFR 3200.1. Geologic and geophysical data do show conclusively that the Marysville area is an anomalous heat gradient within the intrusive Cretaceous Empire Stock. However, existing data are insufficient, at this time, to make the determination of KGRA.

Lands shall be deemed KGRA if they meet criteria as defined by Title 43 CFR 3200.1. Such criteria include: a) geologic and technical data, b) a discovery on or nearby such lands, and c) competitive interest in the entire area covered by an application for a geothermal lease. Appellant will attempt to show that the Marysville Area does not qualify under most of these categories.

A. GEOLOGIC AND TECHNICAL EVIDENCE

1. The existence of silicious sinter and natural geysers - a review of regional geology and written articles, indicates the absence of recent sinter deposits in the immediate area. No natural geysers or hot water exist at the surface within 20 miles of Marysville.

2. The temperature of fumeroles, thermal springs and mud volcanoes - the Marysville area contains no fumaroles, thermal springs or mud volcanoes, or abnormally hot surface water.

3. The SiO₂ content of spring water - because the Empire stock is a "blind" anomaly, it is a closed system. No spring water is evident which emanates from the stock itself.

4. The Na/K ratio in spring waters or hot water systems - As above.

5. The existence of volcanoes and calderas of late Tertiary or Quaternary age - although the area appears to have had at least two Tertiary igneous events, with emplacement of numerous feldspar porphyry dikes and sills, actual Tertiary volcanoes and calderas are not apparent. However, extensive erosion has occurred since the episode of volcanism. The Empire stock is an unexposed quartz-feldspar porphyry intrusion.

6. Conductive heat flows and geothermal gradient - no conductive heat flows are evident. An abnormal gradient has been proven, however, based on shallow wells drilled for such investigation and for mineral exploration, and the deep well drilled in Sec. 32.

7. The porosity and permeability of a potential reservoir - in the Sec. 32 deep test the reservoir below 975' of depth consists of quartz feldspar porphyry grading to granite. Such a reservoir contains very little porosity and no primary permeability. Any geothermal flow from such a reservoir would be allowable only through secondary permeability (fractures). The extent, orientation and connectivity of this secondary permeability system at Marysville is unknown. Thus, the extent and volume of any potential geothermal reservoir is unknown.

8-10. Electrical resistivity, magnetic, gravity, airborne infrared, and other geophysical methods - all such additional geophysical surveys have confirmed the presence of a heat anomaly. However, to date no data have been collected which show the event, orientation, amount, surface temperature, or long-term deliverability of any type of geothermal fluids which must be pumped to the surface from such a reservoir.

B. DISCOVERY OR DISCOVERIES

Any well deemed capable of producing geothermal resources in commercial quantities - the Sec. 32 deep well, the Marysville Geothermal Well No. 1, although a confirmation of anomalous heat gradient, produced no geothermal resources of "commercial" quantity. In its present condition the well is expected to produce no geothermal resources of any volume. Significant expenditures would be required for a submersible pump test to determine the quantity, temperature and longevity of geothermal fluid.

C. COMPETITIVE INTEREST

According to information included in the injection dated June 3, 1997 and received by applicant June 6, 1997, the Marysville KGRA was established February 1, 1974. One criterion which contributed to the designation was the existence at that time of "definite competitive interest." Apparently, at least 7 overlapping non-competitive applications were filed. Available

information, however, indicates no filing of competitive lease requests subsequent to rejection of the non-competitive applications. Applicant believes that this lack of re-filing shows a definite lack of competitive interest. Applicant further believes that the Marysville Area will not be the area of geothermal interest until the question of producibility of a "commercial quantity" of geothermal fluid is answered.

It is the applicant's position, therefore, that available data do indicate the presence of a regional heat anomaly. However, the extent, orientation and content of geothermal fluid within the anomaly are unknown. Significant testing must be conducted to verify the anomaly's potential geothermal commercial value.

(NOA at 1-3.)

In its Answer, BLM first states that there is compelling geologic and technical evidence that the reservoir has the potential to supply hot water that would meet the needs of a direct use facility such as a greenhouse complex heated by geothermal fluids. Because of this, BLM claims, the area meets the definition of a KGRA found at 43 C.F.R. § 3200.0-5(k). (Answer at 1.)

BLM relates that extensive geologic and geophysical research programs were completed in the Marysville geothermal area in the late 1960's and 1970's. BLM states that these studies included a 6,700-foot deep test well drilled in the SW¹/₄NE¹/₄ sec. 32, T. 12 N., R. 6 W., during the last half of 1974. (Answer at 1.) This well, BLM notes, is on land included within Appellant's application. (Answer at 1-2.) BLM states that a detailed geologic and technical review of the KGRA was completed after receipt of Appellant's noncompetitive lease application. Following its review of the data, technical reports, and published literature, BLM concluded that the determination made in 1975 remained valid. It noted its finding that the lack of competitive interest warranted removing certain lands from the competitive list. Thirteen sections, including the two sought by Appellant, were retained on the competitive bid list because the technical data supported that status. (Answer at 2.)

In addressing the specifics of Appellant's claims, BLM, in its Answer, addresses the geological and technical evidence cited by Appellant which is keyed to the categories for evaluation delineated in 43 C.F.R. § 3200.1(a)(1)-(10). (Answer at 2.) BLM first notes that the Appellant was correct in saying that there are no deposits of silicious sinter in the immediate area, or any thermal springs immediately contiguous to it. BLM states, however, that these were not determining factors in its determination. (Answer at 2.) BLM concedes that Appellant was also correct in stating that there were no fumaroles, mud volcanoes, or abnormally hot surface water in the Marysville area. BLM states, however, that Appellant ignores evidence obtained from the deep well, noting that Battelle

Northwest Laboratory, the contractor for the well, concluded in its final report that the maximum, extrapolated, stabilized reservoir temperatures would measure between 228 and 234 degrees Fahrenheit. Id. BLM points out that although this would not make the KGRA a candidate for electric power generation, it would make the area a strong candidate for being an energy provider for a direct use facility, noting that there are 37 direct use facilities now operating in the United States. Id.

BLM claims that the extensive geochemical analyses completed on water from the deep test well under the direction of the contractor is equally important and cannot be ignored. (Answer at 3.) BLM states that the SiO₂ content of water from that well suggests reservoir temperatures between 230 and 266 degrees Fahrenheit at depth. Admitting that there are no spring waters or hot water systems visible on the surface from which to measure the Na/K ratio (another indicia in preparing a heat model), BLM states that the Na-K-Ca composition of water from the deep test well suggests reservoir temperatures of 329 to 365 degrees Fahrenheit. Id. It finds important the fact that the model of the reservoir prepared by the contractor from data it obtained from the deep well suggests that these temperatures do not exist in a wide area of the reservoir, but are confined to a thin plume somewhere in the reservoir. Id.

In addressing Appellant's claim that one indicia of KGRA status, existence of volcanoes and calderas from the late Tertiary or Quaternary Age, are absent, BLM notes that the two Tertiary igneous events in the area may be the heat source for the geothermal reservoir. BLM explains that there are several intrusive bodies within the boundaries of the KGRA. (Answer at 3.) Similarly, in addressing whether conductive heat flow exists in the KGRA and whether a sufficiently steep geothermal gradient exists to suggest a commercial heat source, BLM states:

Measured heat flow in the KGRA is up to 10 times higher than the already high regional background in western Montana. The measured gradient is up to eight times higher than background. Also, conductive heat flow does occur in the KGRA. In the deep test well, energy transport in approximately the first 1640 feet is primarily by thermal conduction. Below 1640 feet, it is essentially by convection.

(Answer at 3.)

In response to Appellant's claim that the only permeability or porosity in the reservoir is fracturing and faulting, or secondary porosity, BLM admits that it is difficult to determine the extent, orientation, and connectivity of the secondary permeability of the reservoir. However, it disputes Appellant's claim that the extent and volume of the geothermal reservoir are unknown. (Answer at 3.) BLM cites the basic model of the reservoir proposed by Battelle Northwest Laboratories in 1975 and published in "The Marysville, Montana Geothermal Project Final Report." Id.

BLM agrees with Appellant that electrical resistivity, magnetic, gravity, airborne infrared, and other geophysical surveys provided useful data

in confirming the heat anomaly in the KGRA, and in modeling the shape and nature of the reservoir. (Answer at 4.)

BLM also addressed discovery and competitive interest. With regard to discovery, BLM concluded that although extensive logging, coring, and other tests were carried out on the deep well, there is no record that the well was subjected to tests that would have conclusively shown its productive capacity. (Answer at 4.) BLM states that it was drilled for scientific research, not to test the commercial viability of the reservoir, but that the data from the well does establish the presence of a geothermal reservoir underlying the area sufficient to qualify the area as a KGRA. Id.

As to competitive interest, BLM states that the original designation of the Marysville KGRA was based on a combination of geologic and geophysical data and competitive interest in the area. Based on the lack of competitive interest at the 1979 competitive sale, and the continuing lack of interest until Appellant's application, 17 of the 30 sections originally included in the KGRA were deleted. (Answer at 4.) BLM argues, however, that

the KGRA remains valid for those lands retained in the KGRA because of the abundant geological, geophysical, and geochemical data summarized above. In addition, the deep test well conclusively shows that there is a geothermal reservoir underneath the area that is capable of producing heat and hot water at temperatures appropriate for direct use such as [a] greenhouse complex.

Id.

[1] It is well established that filing an application for a noncompetitive geothermal lease creates no vested rights in the offeror. If land is found to be within a KGRA at the time of lease application, and no evidence has been offered to show the KGRA designation is in error, a noncompetitive offer to lease that land must be rejected. See Robert T. Forest, 104 IBLA 201, 202 (1988); John H. Anundson, 83 IBLA 340 (1984); Marvin L. McGahey, 50 IBLA 4 (1980); Earth Power Corp., 29 IBLA 37 (1977). As we stated in John H. Anundson, supra:

Section 2(e) of the Geothermal Steam Act of 1970, 30 U.S.C. § 1001 [1994], provides for the designation of KGRA's. Pursuant to 30 U.S.C. § 1003 [1994], lands within a KGRA may only be leased by competitive bidding. An application for a noncompetitive geothermal lease must be rejected if the land is found to be within a KGRA prior to issuance of a lease. 43 CFR 3210.4; Marvin L. McGahey, supra.

83 IBLA at 341.

After our review of the evidence discussed by Appellant and BLM, we are not convinced that the BLM decision to continue the KGRA status for sections 31 and 32 is in error. BLM has documented evidence in

"The Marysville, Montana Geothermal Project Final Report," published in 1975, which was based upon the evidentiary factors set forth in 30 U.S.C. § 1001(e) (1994), that affirmatively justifies the designation of the acreage being sought by Appellant as a part of the Marysville KGRA. Appellant's assertions demonstrate a legitimate difference of opinion concerning how that data should be interpreted, but fall short of demonstrating error. Accordingly, because Appellant's noncompetitive lease offer described lands now included within a KGRA, BLM properly rejected the lease offer.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the decision appealed from is affirmed.

James P. Terry
Administrative Judge

I concur:

R.W. Mullen
Administrative Judge